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ORR contribution for Project No. 00.4566, The Effect of Air Strikes on the Economy of North Vietnam  
Estimation of Physical Damage

A. Economics

1. The economic losses caused by US/ARVN air strikes in North Vietnam continue to increase, and the adverse effects of these losses are now spreading throughout the economy. The losses, however, still remain small compared to total economic activity, because the country is predominantly agricultural and the major industrial facilities have not been attacked. The most important effects on the economy are: (a) difficulties in distributing food to local food-deficit areas; (b) production losses caused by diversion of skilled manpower and scarce materials from productive uses to the repair of damaged facilities; (c) disruption of normal work schedules because of the threat of air attack; (d) <sup>(1)</sup>reduction of foreign exchange earnings because of the difficulty in moving export goods to port; (e) losses in agriculture attributable to damage to power stations and thus to irrigation capacity; and (f) problems in management and administration caused by the disruption and re-location of economic activity. The cumulative strains now show signs of becoming severe enough that aid from Communist countries will have to be stepped up if the economy is to meet both minimum civilian and military requirements. But economic deterioration so far has not affected the capabilities of North Vietnam's armed forces, which place little direct reliance on the domestic economy for material.

<sup>1</sup> See Tables I and 2 for detailed information on types and extent of military and economic damage.

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The one exception: Movement of personnel, equipment, and supplies is being hampered by damage to transportation facilities.

2. Direct losses caused by damage to economic facilities and equipment is now estimated at almost \$20 million. Measurable indirect losses amount to \$12.5 million, mainly reduction in foreign trade and agricultural output. The direct economic losses that can be measured have fallen most heavily on the transportation sector of the economy. The cost of permanent reconstruction of rail/highway bridges would be about \$3 million, and the replacement or repair of destroyed or damaged transport equipment would cost an additional \$4.3 million. The cost of temporary repairs to bridges would be about \$1 million. Reconstruction of the damaged electric power plants would cost about \$4.5 million and the textile mill \$1 million. Repair costs for the petroleum storage facilities are estimated at about \$900 thousand. <sup>(761)</sup> The growing loss of foreign exchange earnings -- now totalling \$6.5 million -- is appreciable, though not yet serious. The growing losses from lower production throughout the economy can be quantified only in agriculture where potential losses in fall rice crops and other disruption to normal farming will amount to about \$6 million. The measurable costs of reconstruction, replacement, and repair of damaged facilities, if attempted, would represent almost 20 percent of total gross annual investment in industry. In addition North Vietnam is incurring additional costs for temporary expedients to compensate in part for the damaged facilities. <sup>(762)</sup> Purchases of portable electric power generators,

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(763) Temporary bridging equipment, additional motor trucks, and small tanks and drums for the transportation and storage of petroleum are increasing far above normal levels. It is not possible at this point to estimate the value of these purchases.

3. The strains created by the bombing upon distribution, manpower resources and management capabilities are reducing domestic industrial performance and the effectiveness of Communist aid. Industry in the parts of the country affected directly by the bombing usually accounts for only about 20 percent of total gross industrial output and consists mainly of textile production, food processing, lumber and paper production, chromite mining, and processing of crude phosphate fertilizers. The economic losses sustained in the bombed areas are principally a consequence of the loss of electric power, and disruptions to the transportation system. Hardships are severe in these parts of the country and continuing shortages of food and equipment are hampering reconstruction efforts. Nevertheless the primarily rural nature of the area permits continued functioning of the subsistence economy. In the more economically important parts of the country there is explicit evidence of industry's failure to outpace the increasing disruption caused by the air strikes and the policies adopted as a consequence of them. An important official in industry has stated that despite the overtime work required of almost all workers, most machinery and tool factories and many factories producing consumer goods have been unable to keep up with demand.

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The strains upon distribution, manpower resources and management capabilities have increasingly affected industrial production adversely. These strains resulting indirectly from the bombing are being compounded by implementation of plans to disperse industrial production in order to make industry less vulnerable to air attack and to reduce the requirement for transportation. The problems that are hampering North Vietnam's reconstruction efforts and have reduced industrial output are also reducing the effectiveness of aid from Communist countries. <sup>702</sup>Progress is being delayed in the completion of several economic development projects for which foreign aid is being received. Work is continuing on other major economic projects of the First Five Year Plan (1961-1965) and several additional projects have been started. Economic development, therefore, appears to be continuing, but it is no longer orderly and probably will be retarded significantly.

4. The bombings of the bridges on the Dong Dang - Hanoi railroad line apparently halted traffic only briefly, and the receipt of military equipment and economic goods from China by this route probably has not been significantly impeded. Through traffic on the Hanoi - Lao Cai railroad line has not resumed since this line was first bombed in mid-July. The railroads south of Hanoi remain inoperable for through traffic. In spite of the heavy damage to road bridges, substantial amounts of both economic and military traffic continue to be hauled by motor truck. The movement of all types of traffic on the waterways also appears heavy. The bombings have, nevertheless, created severe problems and have reduced capacity in all forms of

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transportation. Repair of the damage to the five electric power plants has not progressed. The reduction of total generating capacity by about 14 percent continues to cause relatively minor curtailment of mining and industrial operations and loss of power for irrigation systems. Bulk petroleum storage facilities have been reduced in capacity by about 17 percent. There are localized problems in petroleum distribution and storage, but there is no overall petroleum shortage in the country. Priorities and alternate means of communication have had to be established in the telecommunications industry and the effectiveness of postal service is continuing to decline. Food shortages continue to be reported as particularly serious in the southern provinces. Interruption of normal irrigation services in Thanh Son and Nghe An provinces and interruption of usual farming practices will probably cause a reduction in the fall rice harvests. The volume of seaborne exports is declining, and there may be a lag of as much as 20 percent in planned exports by the end of the year.

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